Bradley **Kohler**

MECHATRONICS ENGINEER · UNIVERSITY UNDERGRAD

Waterloo, ON, Canada

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Sum**mary**

Mechatronics engineer at McMaster University.
Coding is my passion.
I like to solving new, challenging problems.
My programming skills include (but are not limited to):

- BASH, C/C++, Python and Java
- Microcontroller and Microprocessor firmware (MATLAB/Simulink, Labview, ARM Mbed, STM32, Nordic, Qualcomm Snapdragon)
- Embedded Operating Systems (Linux, mbedOS, ChibiOS, FreeRTOS)
- PCB hardware design (Verilog HDL, NI Multisim, Eagle)
- Systems design (Maplesim, AutoCAD, SolidWorks)
- Mathematics (Maple18, numpy, Eigen, MATLAB)

Wor**k Experience**

Northern Digital Inc. — *Waterloo, Ontario*
ADVANCED RESEARCHER & FIRMWARE DEVELOPER — *May 2018 - PRESENT*

- Designed and programmed embedded C firmware for active tool tracking probe with sensor data fusion for 3DG system.
- Designed and implemented three sensor data fusion algorithms for 3D tracking systems including 3DG anise fusion, local attitude estimation and local gravity estimation.
- Developed Python libraries for sensor fusion visualization and statistical analysis.
- Developed C application for 3DG inertial data simulation.
- Developed embedded C sensor drivers for ARM processors using low level HAL with platforms Nordic, Snapdragon and STM32.
- Worked with embedded C libraries for signal generation and reception.

McMaster University — *Hamilton, Ontario*
STUDENT RESEARCHER & TEACHING ASSISTANT — *May 2017 - Sept. 2017*

- Developed embedded C software for safety critical systems.
- Implemented pacemaker stateflow on MATLAB simulink which was uploaded to a custom prototype PCB.
- Produced software documentation for system design.

Emnor Mechanical Inc. — *Hamilton, Ontario*
STUDENT EMPLOYEE & SOFTWARE DEVELOPER — *May 2016 - Sept. 2016*

- Developed inventory management software for large warehouses.
- Developed large SQL databases for thousands of orders and parts using Microsoft Access.
- Managed company payroll, invoices and purchase orders.

McMaster University — *Hamilton, Ontario*
SOFTWARE ENGINEERING TEACHING ASSISTANT — *May. 2015 - Dec. 2015*

- Prepared lessons for students and presentations for laboratories.
- Graded student software laboratory test submissions.

Emnor Mechanical Inc. — *Hamilton, Ontario*
MECHANICAL REPAIRMAN & SHOP EMPLOYEE — *May 2015 - Sept. 2015*

- Reverse engineered old damaged parts and produced CAD drawings using Faro Arm.
- Disassembled, repaired and reassembled centrifugal pumps.
- Maintained company shipping department and inventory.

Edu**cation**

McMaster University — *Hamilton, Ontario*
MECHATRONICS ENGINEERING CO-OP — *Sept. 2014 - PRESENT*

- Mechatronics IV
- McMaster Entrance Award Scholarship

Galt Collegiate Institute — *Cambridge, Ontario*
SECONDARY SCHOOL GRADUATE — *Sept. 2010 - June 2014*

- 150th Anniversary Award Recipient
- Honors Student

Extracurricular Activity

McMaster Canada-Israel Startup Competition
Hamilton, Ontario

STARTUP COMPETITION 1ST PLACE
June, 2019

- Winner of the 2019 McMaster Canada-Israel Startup Competition.
- Designed and programmed numerous technologies to accurately automate patient fluid intake.
- Traveled to Tel Aviv, Israel to present technologies to companies, universities and nursing homes.
- Presented technologies to Canadian companies, universities and nursing homes.

Hack The North
Waterloo, Ontario

HACKATHON MENTOR
Sept. 2018

- Assisted Hackathon groups with embedded system problems.

McMaster Sumobots
Hamilton, Ontario

CLUB MEMBER
Jan. 2018 - April 2018

- Gained experience working in a small group on embedded systems and embedded system IO.
- Worked with CAD software to develop controller casing.
- Competed against other groups in the final competition.

Ronald McDonald House
Hamilton, Ontario

COMMUNITY HELPER
Jan. 2017 - May 2018

- Gained experience working with the community to help sick children indirectly.
- Assisted with cleaning the facility and baked desserts.